

Notice of Allowability	Application No.	Applicant(s)	
	10/798,942	WU ET AL.	
	Examiner	Art Unit	
	Lucy P. Chien	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application filed on 3/11/2004.
2. ☒ The allowed claim(s) is/are 1-3.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>3/11/2004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Amendment

Applicant's arguments filed 9/12/2005 have been fully considered.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Title change: "Transflective liquid crystal display device having particular angles between optical axes"

Reasons for Allowance

Kubo et al (US 6295109)

Kubo et al discloses in Figure 3:

A first substrate (1)

A second substrate (2) A liquid crystal layer (5) disposed between the first (1) and second substrates (2).

A first polarization plate (6) arranged on the first substrate (6) and opposite to the liquid crystal layer (5)

A second polarization plate (9) arranged on the second substrate (2) and opposite to the liquid crystal layer (5)

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A first half-wavelength ($\lambda/2$) plate (11) arranged between the first polarization plate (6) and the liquid crystal layer (5)

A first quarter wavelength ($\lambda/4$) plate (7) arranged between the first half-wavelength plate (11) and the liquid crystal layer (5)

A first alignment film (Column 30, rows 18-27) arranged between the first quarter wavelength plate (7) and the liquid crystal layer (5)

A second half-wavelength ($\lambda/2$) plate (12) arranged between the second polarization plate (9) and the liquid crystal layer (5)

A second quarter wavelength ($\lambda/4$) plate (10) arranged between the second half-wavelength plate (12) and the liquid crystal layer (5)

A second alignment film (Column 30, rows 18-27) arranged between the second quarter wavelength plate (10) and the liquid crystal layer (5)

A reflective electrode (3) and a transparent electrode (8) arranged in-plane between the second alignment film (Column 30, rows 18-27) and second substrate (2)

And a backlight (Column 1, rows 26-29) arranged on a surface of the second polarization plate and opposite to the second substrate (2) to complete a LCD structure.

Wherein

Kubo et al also discloses (Shown in Figure 18C and 18D):

An angle between the transmissive axis of the second polarization plate (9) and a retardation axis of the second half-wavelength ($\lambda/2$) plate (12) is 15° from the polarization plate (9), which is between -30° to 20° .

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An angle between the retardation axis of the first half-wavelength ($\lambda/2$) plate (11) and a retardation axis of the first quarter wavelength ($\lambda/4$) plate (7) is 45° degrees that is between 30° to 100°.

An angle between the retardation axis of the second half-wavelength ($\lambda/2$) plate (12) and a retardation axis of the second quarter wavelength ($\lambda/4$) plate (10) is 45°, that is between 30° to 80°.

The light entering gets twisted by the liquid crystal then depending on the given angle of the other layers, leaves at a desired angle set by these specific angles as claimed.

Kubo et al does not disclose the twist angle of the liquid crystal is 40-80 degrees and the retardation of the liquid crystal is 200 to 300 nm. The rubbing direction of the first alignment film and the first polarization plate is between -20° to 80°. The rubbing direction of the second alignment film and the second polarization plate is between -20° to 20°. The angle between the first polarization plate and the first half wavelength plate is between 60-110 degrees. The angle between the second polarization plate and second half wavelength plate is between -30 to 20 degrees.

However, details regarding the arranged layers and angles do not closely read on those specifics set forth in the present invention. Therefore, the present invention is considered to be patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

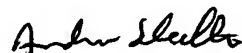
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy P. Chien whose telephone number is 571-272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucy Chien
Examiner
Art Unit 2871
LC


ANDREW SCHECHTER
PRIMARY EXAMINER